AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method of operating an aircraft, comprising:

monitoring operating parameters of a component of the aircraft;

monitoring system-level health of [[and]] an aircraft control system including the component, wherein the system health is monitored to determine break points for health discrimination;

processing the operating parameters and the system-level health to determine health of the component, including performing principal component analysis (PCA) to provide a reduced set of data, determining a scale factor from the PCA, and using the reduced set in conjunction with the system level health to determine a health assessment parameter for the component, wherein the breakpoints are combined with the scale factor to determine the health assessment parameter; and

reconfiguring at least one of the component and the flight control system to compensate for the component during operation if the health assessment parameter indicates a degradation of the component.

2-9. (Canceled)

10. (Previously presented) The method of Claim 1, wherein reconfiguring at least one of the component and the system includes reconfiguring the flight control system to take into account a degradation of an actuator.

11. (Previously presented)The method of Claim 1, further comprising feeding back the reconfiguring of the at least one of the component and the system into the processing of the operating parameters and the system-level health.

12. (Previously presented) The method of Claim 1, further comprising inputting the system and component health into maintenance support.

13. (Previously presented) The method of Claim 12, wherein the maintenance support includes at least one of enable post-flight analysis and interpretation, and prognosis of the component and system.

14. (Original) The method of Claim 1, further comprising detecting a level of degradation of the component that can be used to reduce false alarms in a Built-In Test system.

15. (Original) The method of Claim 14, further comprising trending one or more degradations to provide a prognostic capability.

16. (Original) The method of Claim 1, wherein reconfiguring at least one of the component and the system includes reconfiguring at least one of the component and the system using an integrated vehicle health management system.

17. (Original) The method of Claim 1, further comprising integrating an integrated vehicle health management system with reconfigurable control, and performing tests of at least one of the component and the system during actual operation of the product.

18. (Canceled)

19. (Withdrawn) The method of Claim 1, wherein eigenvalues of a covariance matrix are computed from the PCA, and wherein the eigenvalues are used to compute the health assessment parameter.

20. (Withdrawn) The method of Claim 19, wherein computing the health assessment parameter includes computing a health measurement function as scale(λ_{max})exp(BP(λ)).

21. (Withdrawn) The method of Claim 19, wherein computing the health assessment function includes computing a health power spectrum as a function of the eigenvalues of a covariance matrix.

22. (Withdrawn) The method of Claim 21, wherein the health power spectrum is determined as

$$S_{hps}(w) = \sum_{k=-\infty}^{\infty} R_{lcf}(k)e^{-jwk}$$

23. (Withdrawn) The method of Claim 21, wherein the health power spectrum is developed from a Fast-Fourier Transform of an autocorrelation of an input vector X and a linear combined vector set Y.